

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A method of supplying a substrate in a chip mounting apparatus, comprising:

supplying a substrate on which a chip is to be mounted to a position for chip mounting, wherein the method supplies the substrate in the same manner when the substrate is a discrete substrate or an independent unit substrate consisting of a plurality of discrete substrates.

2. through 35. (Cancelled)

36. (New) A method of supplying a substrate in a chip mounting apparatus, comprising:

transporting a substrate to a position above a stage via a conveyor;

moving the conveyor and stage toward each other so that the stage removes the substrate from the conveyor and supports the substrate above the conveyor for chip mounting.

37. (New) The method of supplying a substrate according to claim 36, further comprising maintaining a volume around the stage with a positive air pressure to maintain a clean environment.

38. (New) The method of supplying a substrate according to claim 36, wherein the movement of the conveyor and stage toward each other is provided by movement of the conveyor while the stage remains stationary.

39. (New) The method of supplying a substrate according to claim 36, wherein the movement of the conveyor and stage toward each other is provided by movement of the stage while the conveyor remains stationary.

40. (New) The method of supplying a substrate according to claim 36, wherein the conveyor is of a concave shape with a through hole in a bottom surface thereof, so that the concave shape supports a perimeter of the substrate and the through hole allows passage of a portion of the stage.

41. (New) The method of supplying a substrate according to claim 36, further comprising activating a stopper to stop the movement of the substrate when it reaches a position above the stage.

42. (New) The method of supplying a substrate according to claim 36, wherein the substrate is a discrete substrate.

43. (New) The method of supplying a substrate according to claim 36, wherein the substrate is an independent unit substrate.

44. (New) The method of supplying a substrate according to claim 36, wherein the substrate is a substrate for multiple devices.

45. (New) A method of supplying a substrate in a chip mounting apparatus, comprising:
removably holding the substrate in a substrate carrier;
transporting the substrate carrier to a position above a stage;
moving the substrate carrier and stage toward each other so that the stage removes the substrate from the substrate carrier and supports the substrate above the substrate carrier for chip mounting.

46. (New) The method of supplying a substrate according to claim 45, further comprising maintaining a volume around the stage with a positive air pressure to maintain a clean environment.

47. (New) The method of supplying a substrate according to claim 45, wherein the movement of the substrate carrier and stage toward each other is provided by movement of the substrate carrier while the stage remains stationary.

48. (New) The method of supplying a substrate according to claim 45, wherein the movement of the substrate carrier and stage toward each other is provided by movement of the stage while the substrate carrier remains stationary.

49. (New) The method of supplying a substrate according to claim 45, wherein the substrate carrier is of a concave shape with a through hole in a bottom surface thereof, so that the concave shape supports a perimeter of the substrate and the through hole allows passage of a portion of the stage.

50. (New) The method of supplying a substrate according to claim 45, further comprising activating a stopper to stop the movement of the substrate when it reaches a position above the stage.

51. (New) The method of supplying a substrate according to claim 45, wherein the substrate is a discrete substrate.

52. (New) The method of supplying a substrate according to claim 45, wherein the substrate is an independent unit substrate.

53. (New) A method for supplying a chip in a chip mounting apparatus, comprising:
providing chip trays, each holding chips, stacked in layers in a tray guide;
vertically moving the chip trays relative to the tray guide while holding a second chip tray that is disposed second from the bottom of said chip trays stacked in layers to allow separation of a lowermost chip tray from said second chip tray;
transporting the lowermost chip tray to an adjacent chip supply stage before use; and

transporting the lowermost chip tray away from the chip supply stage after use.

54. (New) The method for supplying a chip according to claim 53, further comprising supporting the lowermost chip tray via a tray stage after separation from the second chip tray

55. (New) The method for supplying a chip according to claim 54, wherein said tray stage contacts a bottom portion of said lowermost chip tray by the relative movement of the tray stage and the tray guide toward each other.

56. (New) The method for supplying a chip according to claim 55, wherein, as the second chip tray is held, the lowermost chip tray is allowed to rest on the tray stage as the tray stage is separated from the tray guide by the relative vertical movement of said tray stage and said tray guide away from each other.

57. (New) The method for supplying a chip according to claim 56, wherein said vertical movement is provided by movement of the tray stage while the tray guide remains stationary.

58. (New) The method for supplying a chip according to claim 56, wherein said vertical movement is provided by movement of the tray guide while the tray stage remains stationary.

59. (New) The method for supplying a chip according to claim 53, wherein the tray guide comprises vertically extending guides that are L-shaped in cross section.

60. (New) The method for supplying a chip according to claim 53, wherein the chip trays stacked in layers have projections that cooperate with vertically adjacent chip trays to prevent side to side movement of the chip trays.

61. (New) The method for supplying a chip according to claim 53, wherein the lowermost chip tray is horizontally pushed by a tray pusher to the chip supply stage.

62. (New) The method for supplying a chip according to claim 53, wherein the transporting of the lowermost chip tray both before and after use is in the same direction.

63. (New) The method for supplying a chip according to claim 53, further comprising holding the lowermost chip tray in place on said chip supply stage during use.

64. (New) The method for supplying a chip according to claim 63, wherein a retractable projection engages with the side of said lowermost chip tray to hold the lowermost chip tray in place.

65. (New) The method for supplying a chip according to claim 53, further comprising depositing the lowermost chip tray into an empty tray box after use.

66. (New) A method for mounting a chip on a substrate, comprising:

providing a sealed clean mounting area with a positive air pressure;

supplying a substrate, on which a chip is to be mounted, to the sealed clean mounting area by: transporting a substrate to a position above a stage via a conveyor; and moving the conveyor and stage toward each other so that the stage removes the substrate from the conveyor and supports the substrate above the conveyor for chip mounting;

supplying a chip to the clean sealed mounting area by: providing chip trays, each holding chips, stacked in layers in a tray guide; vertically moving the chip trays relative to the tray guide while holding a second chip tray that is disposed second from the bottom of said chip trays stacked in layers to allow separation of a lowermost chip tray from said second chip tray; and transporting the lowermost chip tray to an adjacent chip supply stage before use;

transporting the chip from the chip supply stage to the sealed mounting area; and
mounting the supplied chip on the supplied substrate.

67. (New) The method for mounting a chip on a substrate according to claim 66, further comprising exhausting the positive air pressure through substrate magazines wherein substrates are stored before being supplied.

68. (New) The method for mounting a chip on a substrate according to claim 66, further comprising transporting the lowermost chip tray away from the chip supply stage after use.

69. (New) The method for mounting a chip on a substrate according to claim 66, further comprising:

removably holding the substrate in a substrate carrier while transporting the substrate carrier to the position above the stage;

removing the substrate from the substrate carrier when the conveyor and stage are moved toward each other so that the substrate is supported above the substrate carrier for chip mounting.